

## **REMARKS/ARGUMENTS**

This Amendment is submitted in reply to the First Office Action dated May 29, 2009. Applicant respectfully requests reconsideration and further examination of the patent application pursuant to 37 C.F.R. § 1.111.

### **Summary of the Examiner's Objections and Rejections**

The specification was objected to because of an informality where "Pittsburgh" was incorrectly spelled.

Claims 1-3, 5-7, 13, 19-21, 23-25, and 31 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Walton (US 2003/0128658).

Claims 4, 17, 22, and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Walton (US 2003/0128658) in view of Salto (US 5,406,551).

Claims 10, 28, and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Walton (US 2003/0128658) in view of Ketchum (US 2004/0234004).

Claims 18 and 36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Walton (US 2003/0128658) in view of Kim (US 7,242,715).

Claims 8, 9, 11, 12, 14-16, 26, 27, 29, and 32-34 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Summary of Claim Amendments**

Applicant has not amended any of the pending claims 1-36.

### **Remarks regarding Specification Objection**

The specification was objected to because of an informality where "Pittsburgh" was incorrectly spelled. Applicant has corrected this typo and respectfully requests removal of this objection.

## Remarks regarding Claim Objections

Claims 8, 9, 11, 12, 14-16, 26, 27, 29, and 32-34 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant thanks the Examiner for allowing claims 8, 9, 11, 12, 14-16, 26, 27, 29, and 32-34, however as discussed below Applicant submits that the pending independent claims 1 and 19 are patentable in view of Walton, Salto, Ketchum and Kim.

## Remarks regarding the §102(e) and §103(a) rejections

Applicant respectfully traverses the anticipation rejection of pending independent claim 1 in view of Walton. The pending independent claim 1 is as follows:

1. A transmission device for prioritising data elements of a data stream for transmission to a receiving device, comprising:  
decodability determining means for determining a decodability of a current data element, the decodability indicating the extent to which the current data element is decodable at the receiving device;  
prioritising means for assigning a priority to the current data element based on the determined decodability; and  
a transmitter controller for scheduling a transmission of the current data element to the receiving device based on the priority (emphasis on main distinguishing limitations).

In rejecting independent claim 1, the Examiner cited Walton's paragraph [0245] which is as follows:

[0245] FIG. 8A is a block diagram of a base station 104 and two terminals 106 within MIMO-OFDM system 100 for downlink data transmission. At base station 104, a data source 808 provides data (i.e., information bits) to a transmit (TX) data processor 810. For each independent data stream, TX data processor 810 (1) codes the data based on a particular coding scheme, (2) interleaves (i.e., reorders) the coded bits based on a particular interleaving scheme, and (3) maps the interleaved bits into modulation symbols for one or more transmission channels selected for use for that data stream. The coding increases the reliability of the data transmission. The interleaving provides time diversity for the coded bits, permits the data to be transmitted based on an average SNR for the transmission channels, combats fading, removes correlation between coded bits used to form each modulation symbol, and may further provide frequency

diversity if the coded bits are transmitted over multiple frequency subchannels. The coding and modulation (i.e., symbol mapping) may be performed based on control signals provided by a controller 830.

Applicant respectfully submits that the Examiner's characterization that Walton teaches the claimed invention and in particular Walton's paragraph [0245] teaches the claimed invention is misplaced. The claimed invention relates to prioritizing data elements of a data stream for transmission to a receiving device by determining the decodability of a data element at the receiving device to assign a priority to that data element to be used when scheduling the transmission of that data element to the receiving device (see page 5, lines 3-6). In contrast, Walton relates to techniques for scheduling terminals for data transmission on the downlink and/or uplink in a MIMO-OFDM system based on the spatial and/or frequency "signatures" of the terminals (see abstract and paragraph [0011]). As can be seen, the claimed invention and Walton have completely different fields of use hence it would follow that Walton does not disclose or teach the claimed invention. This is indeed the case as discussed next with respect to the claimed preamble, the claimed decodability determining means, the claimed prioritising means, and the claimed transmitter controller.

The claimed preamble recites a "transmission device for prioritising data elements of a data stream for transmission to a receiving device". Walton relates to scheduling terminals for data transmission on the downlink and/or uplink in a MIMO-OFDM system based on the spatial and/or frequency "signatures" of the terminals. There is no disclosure whatsoever where Walton's terminal has a transmission device for prioritising data elements of a data stream for transmission to a receiving device. In fact, Walton does not contain the claimed term "data element" or the claimed term "prioritising". The manifest differences between the claimed invention and Walton will become even more apparent in the following discussion regarding the claimed decodability determining means, the claimed prioritising means, and the claimed transmitter controller.

Applicant now refers to the claimed decodability determining means which determines a decodability of a current data element, where the decodability indicates the extent to which the current data element is decodable at the receiving device. In discussing this limitation, the Examiner stated the following:

"At base station 104, a data source 808 provides data (i.e., information bits) to a transmit (TX) data processor 810. For each independent data stream, TX data processor 810 (1) codes the data based on a particular coding scheme". The data is coded into OFDM scheme, which means its PN code sequence determines whether it is decodable at the receiver.

(see pages 2-3 in the Office Action).

Applicant notes where Walton discloses a transmit (TX) data processor 810 that for each independent data stream codes the data based on a particular coding scheme. Plus, Walton discloses that "coding increases the reliability of the data transmission". However, Applicant does not see where Walton discloses "the data is coded into OFDM scheme, which means its PN code sequence determines whether it is decodable at the receiver." The Examiner appears to have provided their own interpretation of Walton and even with this particular interpretation Walton still does not read-on the claimed decodability determining means. The claimed decodability determining means determines the decodability of a current data element, where the decodability indicates the extent to which the current data element is decodable at the receiving device (emphasis added). Thus, the claimed decodability determining means does not relate to determining whether or not data is decodable at the receiver as contended by the Examiner. Instead, the claimed decodability determining means relates to determining the extent to which the data is decodable at the receiver. This is a marked difference since the claimed determined decodability is later used to assign a priority to the current data element in the data stream where the priority is then used to schedule the transmission of the current data element to the receiving device. Hence, Walton does not teach the claimed decodability determining means.

Applicant now refers to the claimed prioritising means which assigns a priority to the current data element based on the determined decidability. In discussing this limitation, the Examiner stated the following:

"At base station 104, a data source 808 provides data (i.e., information bits) to a transmit (TX) data processor 810. For each independent data stream...(2) interleaves (i.e. reorders) the coded bits based on a particular interleaving scheme". The bits are reordered accordingly."

(see page 3 in the Office Action).

Applicant notes where Walton discloses a transmit (TX) data processor 810 that for each independent data stream interleaves (i.e., reorders) the coded bits based on a particular interleaving scheme. Applicant submits that Walton interleaves (i.e., reorders) the coded bits but there is not disclosure where this reordering includes prioritizing the current data element based on the determined decodability which indicates the extent to which the current data element is decodable at the receiving device. Walton discussed the specific features of interleaving (i.e., reordering) by disclosing "interleaving provides time diversity for the coded bits, permits the data to be transmitted based on an average SNR for the transmission channels, combats fading, removes correlation between coded bits used to form each modulation symbol, and may further provide frequency diversity if the coded bits are transmitted over multiple frequency subchannels." (see paragraph [0245]) As can be seen, there is no discussion related to prioritizing a current data element in a data stream let alone to prioritizing a current data element based on the determined decodability which indicates the extent to which the current data element is decodable at the receiving device. In fact, Walton's interleaving (i.e., reordering) scheme has absolutely nothing to do with the claimed invention because Walton does not determine the extent to which a current data element is decodable at the receiving device as recited in the claimed invention. Hence, Walton does not teach the claimed prioritising means.

Applicant now refers to the claimed transmitter controller which schedules a transmission of the current data element to the receiving device based on the priority. In discussing this limitation, the Examiner stated the following:

"At base station 104, a data source 808 provides data (i.e., information bits) to a transmit (TX) data processor 810. For each independent data stream...3) maps the interleaved bits into modulation symbols for one or more transmission channels selected for use for that data stream". The data is scheduled for transmission based on the determined priority.

(see page 3 in the Office Action).

Applicant notes where Walton discloses a transmit (TX) data processor 810 that for each independent data stream maps the interleaved bits into modulation symbols for one or more transmission channels selected for use for that data stream. However, Applicant does not see where Walton discloses "the data is scheduled for transmission based on the determined priority". The Examiner appears to have provided their own interpretation of Walton which is not supported by Walton's specific disclosure regarding mapping which is as follows "coding and modulation (i.e., symbol mapping) may be performed based on control signals provided by a controller 830" (see paragraph [0145]). Thus, Walton does not teach the claimed transmit controller. In addition, it follows that Walton's transmit data processor has absolutely nothing to do with the claimed transmit controller because Walton does not determine the extent to which a current data element is decodable at the receiving device and as such never assigns a priority to the current data element based on the determined decodability and as a result never schedules the transmission of the current data element to the receiving device based on the priority. Salto, Ketchum and Kim do not cure these defects. In view of at least the foregoing, Applicant submits that the aforementioned substantial differences between the pending independent claim 1 in view of Walton, Salto, Ketchum and Kim is indicative of the patentability of the pending independent claim 1 and the corresponding dependent claims 2-18.

Applicant respectfully submits that pending independent claim 19 is patentable in view of Walton, Salto, Ketchum and Kim. The independent claim 19 recites the same distinguishing limitations that have been discussed above with respect to independent claim 1. As such, the aforementioned remarks regarding the patentability of independent claim 1 apply as well to independent claim 19. Accordingly, Applicant respectfully submits that independent claim 19 and the corresponding dependent claims 20-36 are patentable view of Walton, Salto, Ketchum and Kim.

### **CONCLUSION**

In view of the foregoing remarks, Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. Applicant, therefore, respectfully requests that the Examiner withdraw all objections and rejections and issue a Notice of Allowance for pending claims 1-36.

The Commissioner is hereby authorized to charge any fees for this paper and the petition for extension of time to Deposit Account No. 50-1379.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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